

16

Memorials

OF

WILLIAM BENJAMIN CARPENTER,

C.B., M.D., LL.D., F.R.S.

BORN, OCTOBER 29th, 1813,

DIED, NOVEMBER 10th, 1885.



"The spirit of wisdom and understanding, the spirit of counsel and might, the spirit of knowledge and of the fear of the Lord."

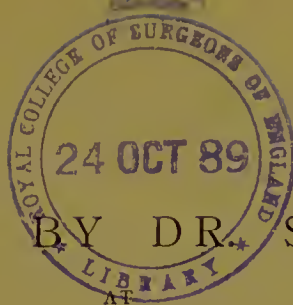
[PRINTED FOR PRIVATE CIRCULATION.]

CONTENTS.

	Page
ADDRESS AT HIGHGATE CEMETERY, BY DR. SADLER .	I

PRESS NOTICES.

THE TIMES	8
THE STANDARD	12
THE ACADEMY	17
THE ATHENÆUM	20
THE LANCET	24
THE MEDICAL PRESS	27
THE INQUIRER	31



ADDRESS BY DR. SADLER

HIGHGATE CEMETERY.

Nov. 13th, 1885.

At all times the passage of a fellow being out of this world leaves behind it, in a small circle at least, the sense of grievous loss ; but there are occasions when private grief is only the intenser part of a feeling which is shared by the public at large.

It is so when the summons to depart comes to one who has been a leader in the great fields of knowledge and thought, or who has occupied a prominent position on account of the great work he has done, or the high character he has borne. In such instances the shadow that is cast upon the heart reaches far beyond the one home on which it more directly falls. And in such instances, too, more than ever, we are struck with the contrast which in the presence of death never fails to impress us—between the silent, unconscious, bodily frame, and that same frame as it was in the fulness of its activity and power.

So strange and incomprehensible it seems that the hand which was so mighty in deeds can have become more helpless than that of the infant; that the brain which was a living library and able to deal with the most difficult problems, or to give birth to immortal productions of genius, can be no longer capable of the simplest sensation; that the tongue from which had proceeded the most eloquent speech can be bereft of all utterance; that the heart which had thrilled thousands of hearts with its emotions can be cold and impassive as the stone beneath which it is laid.

The friend over whom this change has now come, had his place among the foremost thinkers and teachers of our time. His love of knowledge, and the mental gifts which accompanied that love, pointed irresistibly to his vocation. With a remarkable power of acquiring a mastery of facts and setting them in order, and discerning their relative importance and their suggestiveness, he was at the same time one of the clearest of expositors, and one of the most ardent and successful in original research. In the departments of science to which he more especially devoted himself, he has probably left behind him no higher authority than his own. Both here in England and in other countries the men of

science will feel themselves the poorer for being no longer able to take counsel with Dr. Carpenter on those great problems of nature, in the solution of which he had been so efficient a fellow labourer. For myself, often as I had the pleasure of listening to him on a variety of subjects, there was one feeling that always recurred to me afresh, viz., that the lucid stream which flowed from his lips seemed as if it came from an inexhaustible fountain of knowledge.

But though it is only right that there should be here at this time some recognition of his eminent scientific writings and teachings, these services may properly be left to more adequate review and acknowledgment elsewhere; and we may allow ourselves to recall other aspects of his character and life, and dwell rather on what he was to us as a dear companion and friend.

He was, in truth, much more than one of the most distinguished men of science—much more especially to us. His mind was full to overflowing on a large number of subjects; and his way of dealing with them was invariably what the Germans call *gründlich*. It was not in his nature to be superficial in anything. But the habits of exact thought formed by him in his early years had by no means the effect of keeping out of his view those realms in which the

appeal is more to the imagination and the feelings. Art and music were to him sources of daily enjoyment. Music, especially sacred music, seemed to be a necessity to his being; and it would have been a serious deprivation to him not to be able himself to employ this language of the soul with his own voice, and on his favourite instrument—the organ—as well as frequently to be a simple listener to the outpourings of the great masters of song.

High as is the estimation in which he is held for the qualities of his intellect, he is, to my mind, still more estimable for the qualities of his heart. Of course, to those who knew him only at a distance, he was what he appeared in the lecture room and in his more widely circulated books—one of the ablest and most interesting exponents of science; but by those who were brought near to him he will be thought of as the friend greatly to be loved. In my intimate acquaintance with him as a friend and fellow worshipper for nearly forty years, I have found him one of the most affectionate and tender-hearted men whom I have ever known. Nor did he forget that it behoves all of us to ask ourselves whether we can do nothing to help those whose lot in this world is a hard one. Sympathising profoundly with his sister Mary's noble efforts

for the reform of criminal children and for kindred objects, he himself found frequent opportunities of doing something in the same direction, if not precisely in the same way ; and I believe he had as much pleasure in addressing an assembly of working men in a school-room, and making his vast knowledge of practical use to them, as in reading an elaborate paper before a learned society.

There is one other respect in which he has exercised, and I am persuaded will exercise, an influence, on which I must add a few words. At a time when religion and science have appeared too often unhappily divided, it is hardly possible to over-estimate the significance of their union in him, of his steadfast avowal of his own faith, and his personal sympathy with and participation in Christian worship. It is hardly possible to over-rate the value of the contributions from his pen on religious subjects. To none, indeed, of those who have given up all religious profession, was a narrow and unspiritual theology, such as has been too often preached, more repellent than to him. But in the home of his childhood, he breathed an atmosphere both of religious freedom and of religious feeling, and was led by precept and example to think freely and earnestly on religious subjects, and the result was that his

large intellectual culture did not repress in him a most devotional spirit, but gave it a wider range, and enabled it to soar up higher, foreshadowing, I trust, the way in which—

That in us which thinks and that which feels
Shall everlastingly be reconciled,
And that which questioneth with that which kneels.

My friends, death is one of two things—it is either an immeasurable sadness, or it is a glorious promotion; it is either the blotting-out of intelligence, conscience, affection, memory, all that is most worth preserving, or it is a grand step in our being from which we may form boundless expectations and hopes.

Which of these views is true?

This is no time for any other answer than that of our hearts; but that answer may well be to us a voice from heaven itself. Our hearts lead us to Him who is greater than our hearts, and whom we know to be love because He has given us of His own spirit; and it is for this reason they are so responsive to the great religious teachers, who assure us that death is not the end of all things, but the beginning of a higher and purer life, in which all that has been lost in time will be found in eternity, and our poor fragmentary existence on earth will unfold into a com-

pleteness which will satisfy the divinest yearnings of our souls.

So, then, let us lay these mortal remains in their resting-place, not only with all love and honour, but also with all trust and hope, feeling that our very sorrow has in it the germ of the truest comfort—nay, more, the promise of fullness of joy if only we wait till death has done with his separations, and by coming again and again shall unite for ever the loving hearts which he has torn apart for a time.

PRESS NOTICES.

The Times, Nov. 11th, 1885.

We much regret to announce the death yesterday at his residence, Regent's Park Road, of one of the foremost of English men of science, Dr. W. B. Carpenter, in the 73rd year of his age, from accidental burns occasioned by the overturning of the lamp of a hot air bath. The injuries which he sustained were so severe that death followed in a few hours.

Dr. William Benjamin Carpenter was the son of Dr. Lant Carpenter, an eminent Unitarian Minister at Bristol, and was a brother of Miss Mary Carpenter, who, after retiring from the management of a high-class ladies' school, devoted herself for several years to philanthropic work in connection with the education and general advancement of women in India. Dr. Carpenter was born at Exeter in 1813, and entered the medical profession. He was educated at the Bristol School of Medicine, and University College, London, became a member of the English College of Surgeons and a licentiate of the Society of Apothecaries in 1835, and then proceeded to Edinburgh, where he took the degree of M.D. in 1839. He practised his profession for a short time in Bristol, but in 1845 was induced to come to London, and to devote himself to the cultivation of physiology, a science of which he may almost be said to have been the founder. In two closely connected works, the "Principles of Physiology, General and Comparative," and

the "Principles of Human Physiology," he built up a series of generalizations from the scattered facts which had been collected or ascertained by previous workers, and, for the first time, wove our knowledge of animal structure and function into something like a connected whole. Pure science in those days was not a lucrative pursuit, and Dr. Carpenter became Lecturer on Physiology at the medical school of the London Hospital, and afterwards Examiner in Physiology and Comparative Anatomy in the University of London, and Professor of Medical Jurisprudence in University College. He also engaged in several literary undertakings, and among others he edited for several years the *British and Foreign Medico-Chirurgical Review*, and rendered it conspicuous for the strict justice which it rendered to medical writers. He wrote a book called "The Microscope and its Revelations," which was invaluable to the students of his day, and which may still be consulted as containing an admirable exposition of the principles on which the instrument depends. He soon selected the functions of the nervous system as the special branch of physiology in which he would engage, and his first great effort in this direction was contained in an article in his own review, professedly a criticism of Noble's "Physiology of the Brain," in which he not only demolished the last shred of supposed scientific foundation for the collection of fancies which were denominated "phrenology," but extended the idea of reflex nervous function to the centres of sensation and ideation, and enunciated, with a completeness which has stood the test of time, the fundamental notions of "consensual" and of "ideo-motor" action. A remarkable effect of this article was that it accomplished the conversion of the author of the book which was reviewed, insomuch that Dr. Noble shortly afterwards surrendered

the chief hypotheses which he had endeavoured to enforce. The two great works on physiology went through successive editions, in each of which Dr. Carpenter added firmness and strength to the fabric he had raised, and which he finally crowned by the publication of his last book on this subject, the "Principles of Mental Physiology." He was incidentally compelled to consider the strange group of morbid phenomena which are summed up under the name of mesmerism, and of which the so-called "electrobiology," "thought-reading," and many of the phenomena of what is known as "spiritualism," are only modern examples. Dr. Carpenter was the first writer who arranged these vagaries of the nervous system under their proper headings, and produced order out of a chaos of mingled illness and imposture. A review of the whole subject will be found in his "Mesmerism, Spiritualism, &c., historically and scientifically considered," and no one who has not mastered the facts and arguments therein set forth, can be regarded as furnished with the means of forming an opinion concerning the authenticity or value of the many modern miracles which are but reproductions of older ones.

A great crisis in Dr. Carpenter's life was his appointment, in 1856, to the office of Registrar of the University of London, an office which he held for 23 years, and which by releasing him from the necessity of engaging in writing and teaching for the sake of the attendant remuneration, left him free to follow the bent of his genius. From this time, his leisure was chiefly devoted to the study of the Foraminifera, on which he contributed papers of permanent value to the Royal Society and to the Ray Society; and to an examination of the results of the scientific expeditions, culminating in that of Her Majesty's ship *Challenger*, which were sent to undertake deep-sea dredging, and to

investigate the causes and courses of ocean currents. To the University of London his services were invaluable; and when, after many years, he retired with a pension from his office, he was elected a member of the Senate, and continued to the last to exercise a powerful and most beneficial influence on its deliberations. For some time his health had been manifestly failing. Although, last autumn, he returned much invigorated from a holiday in Scotland, the effects of his life of arduous labour were not thus to be set aside; and even prior to the fatal accident his friends regarded his condition with much anxiety. In the scientific world Dr. Carpenter was held in high honour. He was a Fellow, and had been more than once Vice-President of the Royal Society, from which he had also received the Royal medal for his physiological researches; was a Fellow of the Geological and Linnean Societies, an Honorary Fellow of the Royal Medical and Chirurgical Society, and of the Cambridge Philosophical Society; a Corresponding Member of the Institute of France, and of the American Philosophical Society. He received the honorary degree of LL.D. from the University of Edinburgh in 1871, and was created a C.B. in recognition of his services to the University of London. In 1872 he presided over the Brighton meeting of the British Association. Those members of the medical profession whose immediate teacher he was, are now themselves well advanced in life, but there are few of them who will not remember the lucidity of his lectures, and the earnestness and kindness with which he was always ready to hear, and if possible to remove, the difficulties of a pupil. He leaves to his children the heritage of a stainless life, and of a name which, so long as the knowledge of physiology endures, will never be mentioned otherwise than with respect. It is a curious fact that, at one period,

he somewhat ardently embraced the doctrines of the total abstainers from alcohol, and wrote and spoke in defence of them. The observation of the effects of wine in some cases of serious illness which occurred in his own family induced him to reconsider his position, and to return to the faith and practice of moderate drinkers, in which he continued until his death. Probably his last published writing was a letter which appeared in our columns, and in which he contended against the arguments employed by certain opponents of vaccination.

The Standard, Nov. 11th, 1885.

In every land where Science is cultivated the news of Dr. Carpenter's sudden death will be received with unaffected regret. Born in October, 1813, he had entered on his seventy-third year, and if age is to be judged by the work which has been accomplished, William Carpenter was actually an old man. But scientific men are notoriously long-lived, and if of the placid temperament of Humboldt and Milne-Edwards, and Darwin and Chevreul, they ply the scalpel and the test-tube at a time of life when the followers of more wearing pursuits have long been compelled to quit the labouring oar. Indeed, no one looking at the thin, wiry figure of the famous Naturalist, whose death we have to announce, and the untiring energy which he threw into every branch of study, ever regarded him as more than a middle-aged man, from whom the

world had a right to expect a great deal of work before it would be inclined to listen to any idle talk of retirement. Yet there are, perhaps, few men now living who have accomplished more laborious literary toil than did Dr. Carpenter during the half century in which he was busy with his pen and his microscope. The achievements of a *savant* are not, of course, to be judged by the amount of printers' work which their record has consumed. Indeed, in some respects their value is in an inverse ratio to the physical space which they fill. Goodsir's paper on the development of the teeth occupies only a very few pages of the medical journal in which it appeared, and Von Baer's memorable Memoir on the *ovum* does not bulk much more largely, though it—like the discoveries on which the reputation of the Scottish anatomist who was Dr. Carpenter's fellow-student rests—forms a distinct era in the history of Physiology. It was Dr. Carpenter's fate, as, indeed, it was that of Brewster and many another famous physicist of slender purse, to be forced very early in life to support himself by his pen, while devoting the leisure which the publishers afforded him to researches of a more important character. Hence, it would be unfair to compare him with rivals who, by the accident of fortune or the official position which they occupied, could devote their entire time to studies which were not what the Germans call bread-winning. He lectured in schools and colleges. He acted as examiner in Universities. He edited medical journals, and wrote reviews and magazine articles, while treatises on botany, astronomy, and zoology, on human and comparative physiology, on physics and clockwork, on the microscope and on teetotalism, poured from his ready pen, and did good service in their day and generation.

It is just possible that a mind so powerful, a genius so

omniscient, might have been more profitably employed, if not for himself, at least for the world. When logs are to be chopped, a billhook is sometimes quite as serviceable as a razor, though unquestionably when the temper of the one can be added to the strength of the other the work does not suffer. Original research is, however, to many brains a dangerously exciting stimulant. Only a little of it can be taken at a time, and accordingly, unless rest and pastime can be found in a change of work, the mind often breaks down long before it is worn out. Some men seek repose in idleness. Others, like Sir Humphry Davy, find it in Society and the ball-room, and Professor Baird, of the Smithsonian Institute, is understood to allow his mind to lie fallow by reading what in England are known as "penny dreadfuls." Dr. Carpenter obtained all the amusement he required in contributing to an Encyclopædia, or in compiling a text-book so comprehensive that the hardest-reading student finds the mastering of it quite enough for the period of his pupilage. His mind was so comprehensive, his taste so universal, his sympathies so far-reaching, that to have compelled him to limit his attention to one department would have been equivalent to intellectual punishment. Hence, turn where we like, we are sure to come across his traces. His name is popularly associated with the great manuals of Physiology, human, comparative, and general, and that work on the Microscope which has been the *Vade Mecum* of thousands who are no longer in the heyday of their youth. Carpenter on Zoology is still a useful book for students, and if Carpenter on Vegetable Physiology and Botany, Carpenter on Horology, and Carpenter on Mechanics, are a little *passé*, it is simply because Science has advanced so rapidly that the publishers find it cheaper to bring out new works than to re-edit

those which were once so familiar. If, however, we turn to the store-houses of more recondite learning, we find there the contributions to knowledge which were garnered during the respite from all this gigantic professional toil. In the "Philosophical Transactions," in the publications of the Geological Society, and in the various medical and scientific journals, there are proofs enough that, if Dr. Carpenter was the deftest of compilers, he was also the keenest of "researchers." His fine work on the Foraminifera is not likely to be soon superseded, and though at intervals an Irish geologist whose prepossessions are unaffected by such trifles as facts, pronounces him a dreamer, palæontologists of a weightier order are now at one in regarding his masterly description of the *Eozoon canadense* as a labour for which they cannot be too grateful. As a physical geographer, his theory of ocean currents, if not always stable enough to bear the brunt of Dr. Croll's logical onset, is unquestionably not without followers, who admire it for merits more solid than mere ingenuity. But his admirable labours on the orography of the Atlantic and the Mediterranean, during the voyages of the *Lightning*, are beyond dispute the best of the kind which have appeared. To him is due the initiation of the deep-sea dredging operations, which have so revolutionised the doctrines of geographers, and it is, we believe, correct to affirm that when the Challenger Expedition was first resolved on, the intention of the Government was to have appointed Dr. Carpenter to the command of it, had his duties as Registrar of London University permitted of his absence for so long a period as three years.

The eminent Biologist whom we have lost was thus, to express his character in a few words, a many-sided man. The son of Lant Carpenter, and the brother of Mary and

Philip Carpenter, could hardly have been otherwise. It might, perhaps, not be saying too much were we to affirm that he was almost the last of the Naturalists. There are plenty of specialists at work, and preparing for work. But the period when one capacious mind, one iron memory, could take in the entire compass of Natural Science is past. We shall soon have no more zoologists, or botanists, or geologists, or even palæontologists. In place of these workers there are annelidists, pteridologists, laborious triflers over the development of a conferva, and industrious gentlemen who fill volumes with sections of the monticaliporous corals, or, like Wendell Holmes's "Sculpin," declaim against the possibility of any Coleopterist being more than a "Scarabæist." Science is, perhaps, primarily a gainer by such a necessary subdivision; but what it gains in one direction it loses in another. All Nature is one harmonious whole, and it is no more possible for the man who studies merely a little crevice in one of its bye-ways to understand the relations of one part to another, than it is for the mechanic who files its cog-wheels to master the construction of a calculating machine. The beauty and the mystery and the majesty of Creation are not for the specialists who regard life as something to be discovered by the scalpel, or to be "researched" in a dissecting-room. The Darwins and the Humboldts and the Linnés and the Cuviers of the future will not be called from their ranks, though doubtless the architect is still to arise who, out of the bricks and mortar which the hodmen throw down, will construct a fair temple to the glory of the Creator. Like so many of our greatest naturalists—like Darwin, like Huxley, like Hooker, like Rolleston, like Lubbock, and in some respects like Owen also—Dr. Carpenter had no love for being cramped up in a corner,

though even he, when he found a time for lettered leisure, somewhat circumscribed the area over which in the days of his youth he had been so fond of wandering. From the time when he delivered his Students' Address as President of the Royal Medical Society, in 1837—a lecture which contained the germ of the Prize Essay which he won the same year—he was never idle. He was too busy to be unwell, and too active-minded to quarrel, though when attacked no one could hold his own more tenaciously than the *savant* who was as much a man of Letters as a man of Science. In 1879 he retired from official life, only to begin lecturing in America and to enter on a series of researches ample enough for any one who had still all the world before him. To the last he was at work, and had life been spared him a little longer the sympathetic-minded Biologist would have proved that his brain was as keen and his industry as great as in the days when he was doing two men's work as a profession, and compassing that of a third simply for recreation.

The Academy, Nov. 21st, 1885.

Not only the scientific world, but the larger public, have heard with profound regret the news of the sad accident which has taken from among us the familiar and honoured figure of Dr. Carpenter. No one could have listened to him during the last few years without a feeling of admiration for the untiring energy which made him—when past his seventieth year—still one of the most forcible speakers, one of the most constant attendants, and one of the most

eager debaters at the meetings of the Royal Society, the British Association, and similar gatherings. No man of science could witness, without respect and sympathy, the ardent devotion of the veteran naturalist to the cause of scientific progress, and the earnest simplicity of his character. Dr. Carpenter embraced early in life the profession of a student and teacher of biological science, and he never ceased to work with marvellous industry and extreme ability at the tasks which had thus become to him a duty. His interest in the problems which he had helped by his researches to solve, or by his speculations to simplify, was so keen that they were ever the chief occupation of his thoughts and conversation. Where another might have indulged in some trivial dialogue, Dr. Carpenter would, with a vivacity and sincerity that were the outcome of a contented and unwearied mind, captivate his interlocutor with a serious discussion of the grounds urged against his view of the animal nature of Eozoon, or as to the nervous system of Comatula ; or, again, as to the theory of ocean currents, or the reform of the University of London. What he said on such occasions was admirable, and his willingness to meet fairly an antagonist was no less indicative of the true, single-hearted man of science than the almost boyish eagerness with which he would rush into the fray. The younger generations of biologists regarded him as a man of iron frame destined to grow younger, more laborious, more fruitful of good works, as they themselves grew on in years and sunk into rest and obscurity.

Dr. Carpenter's work was so abundant and varied that it is impossible, briefly, to give an outline of it. It was distinguished throughout by the highest and loftiest aims, and by a standard of excellence which, from the first, tolerated nothing but the very best and most thorough,

both in scope and detail, which unsparing labour could attain. His three best-known books—his *Comparative Physiology*, his *Microscope*, and his *Human Physiology*—have each, in their day, exerted a powerful influence for good on the scientific education of the English-speaking world. In the first of these a brilliant and most successful effort was made to establish that common science of organic nature, dealing alike with its animal and vegetable phenomena, which has now received full recognition as “Biology.” In the second the army of amateur observers, who delight in the revelations of the microscope, were trained to accurate work and led on to become useful auxiliaries of the professional explorers of the organic world. In the last a vast service was rendered to medical men, who had previously no such thorough exposition of the facts of human physiology in their hands. The observations and speculations on the functions of the brain and nervous system, contained in the earlier editions of that work, formed the starting-point of a new *Physiology of Mind*, which the author developed at a later period of his career in a separate work—the merit of which is nowadays sometimes overlooked, owing to the fact that its teachings have become familiar commonplace.

Two great public movements owe their success to Dr. Carpenter’s direction. As Registrar of the University of London, to which position he was appointed in 1856, he secured for natural science, in the examinations of that body, the prominent position which it has since held; and in the vigorous administration of the duties of his office, contributed, beyond all other individuals, to the success and reputation of the university.

The *Challenger* Expedition and the preceding explorations of the deep sea by vessels of the Royal Navy would

undoubtedly not have been carried out but for Dr. Carpenter's exertions, and for the fact that he personally took part in the earlier expeditions.

His direct contributions to science, in the form of memoirs embodying original discoveries, are splendid monuments in themselves of his skill and industry; but they become more remarkable still when we remember that they were produced by a hard-worked official, who, at the same time, was engaged in writing books and articles of a more general and educational character. The most important are (1) his beautiful memoirs on the structure of the Foraminifera in the *Philosophical Transactions*, and in a monograph published by the Ray Society (1868). This field he still cultivated in later days—as his last paper in the *Philosophical Transactions* two years ago—on Orbitolites—testifies; (2) his splendidly illustrated and minute researches on the structure and development of Comatula (Antedon); and (3) his later elaborate work (on which he was still busy) on Eozoon Canadense. In Comatula, Dr. Carpenter discovered a peculiar form of nervous system—the nervous nature of which was contested and denied by nearly all zoologists until within the last five years. Within that period the veteran naturalist had the satisfaction of finding his views on this matter very generally accepted, and of seeing his son, Dr. Herbert Carpenter, of Eton College, taking up, in the same thorough spirit as his own, the more extended investigation of the allies of the little Feather-star—the study of which he himself commenced thirty years ago in a summer holiday at Arran.

Dr. Carpenter was born in 1813 at Exeter. He was educated at University College, London, and graduated M.D. at Edinburgh in 1839. After commencing practice as a medical man in Bristol, he removed to London in 1845,

and devoted himself exclusively to literary and scientific pursuits. He became Professor of Medical Jurisprudence in University College, which office he resigned in 1856, when he was appointed Registrar of the University of London. In 1879 he retired from the Registrarship on a pension, and devoted his well-earned leisure to scientific research, and to furthering, by his speaking and writing, a variety of philanthropical movements (for, like his sister, Mary Carpenter, he deserves the title "philanthropist") connected with public education, public health, and the advancement of science.

In 1861, Dr. Carpenter received the Royal Medal of the Royal Society, in 1871 the degree of honorary LL.D. at Edinburgh, and in 1873 he was elected a corresponding member of the Institute of France.

Enough has been said, even in these brief lines, to show that in Dr. Carpenter we have lost a true leader of science, a man of rare character, whose example is of the most ennobling tendency, and whose influence has been and will remain, so long as the memory of British men of science endures, one of the brightest and best.

E. RAY LANKESTER.

The Athenæum, Nov. 14th, 1885.

William B. Carpenter, or Dr. Carpenter as he has long been distinctively called, died on Tuesday morning last from the effects of a peculiar and very painful accident. Though he was more than seventy years of age, and had obviously aged within the last few months, it was hoped by his friends that the affectionate care of his family would have preserved him to us for several years to come.

Dr. Carpenter, as within the last month he observed to the writer, had a life of hard work. He was for years actively engaged in the drudgery of teaching; he was always preparing and compiling valuable manuals; and he was an energetic writer for, and editor of, periodical publications; the activity of many of his best years (1856-1879) was devoted to the interests of the University of London, and much of the high position which that examining body bears is due to Dr. Carpenter's character, feelings, and pursuits; he was constantly engaged in elaborate researches into the general or minute structures of animals, and he took more than his fair share in the duties which scientific men owe to the scientific bodies with which they become connected.

But, in addition to all these engagements and studies, Dr. Carpenter was essentially a good citizen. He took the highest interest in social questions, on which he threw the light of scientific knowledge; he persistently endeavoured to expose such superstitions or follies as were based on ignorance or neglect of a knowledge of natural laws; and he entered actively into the pursuit of objects which appeared likely to improve the sciences he had at heart. It is sufficient to refer to his lectures on temperance, his letters on vaccination, his exposure of phrenology, his treatment of the spiritualists and their doctrines, and the share which he took in the early days of deep sea dredging and in advancing the general cause of marine zoology, to prove abundantly the statements just made; if any others are needed, a file of the *Times* has only to be consulted.

In the department of zoology we must make especial reference to his reports on the microscopic structure of shells, presented to the British Association in 1844 and

onwards, his work on the Foraminifera (and the consequent discussions on the organic nature of *Eozoon canadense*) published in the "Transactions" of the Royal Society and in a volume of the Ray Society's publications, and his monograph on the structure of the feather-star. He was a diligent student and a powerful writer on every point connected with the use and improvement of the microscope, and he devoted much thought and attention to the difficult problems of ocean currents.

But a little knowledge or reflection will make it obvious that Dr. Carpenter made numerous personal investigations in every branch of animal biology; this is, indeed, sufficiently evident from the fact that, although his great and widely-known works on human physiology and on the microscope were first published long before the biological sciences had attained their present magnitude, they were based on knowledge so wide and were so thoughtfully elaborated that editions of both are still called for, and are still necessary to every advanced student.

In addition to such honours as the Fellowship of the Royal Society, the presidency of various societies, and an honorary doctorate of laws from his old University of Edinburgh, Dr. Carpenter was a corresponding member of the Institute of France and of the American Philosophical Society, and a C.B. He leaves a widow and several children, some of whom are well known as men of science, to lament his loss. Dying in his seventy-third year, respected and regretted by all who knew him, he was an example of arduous devotion to duty and of single-minded love of science such as the world will not easily forget.

At the meeting of the Royal Microscopical Society on Wednesday evening last the President (the Rev. W. H. Dallinger, LL.D., F.R.S.), referred in eloquent and feeling

terms to the death of Dr. Carpenter, who had been a president of the Society, and who always exhibited the greatest interest in its affairs.

The Lancet, Nov. 14th, 1885.

The profession at large will have felt much regret at the death, under very sad and distressing circumstances, of Dr. W. B. Carpenter, which resulted from the overturning of the lamp of a hot air bath, on the 9th inst., inflicting such severe burns that he only survived for a few hours after the accident.

Dr. Carpenter was born in Exeter in 1813. His father was the well-known Unitarian minister in that city, and his sister was Miss Mary Carpenter, who in early life was engaged in teaching, and at a later period occupied herself with the education and general advancement of women in India. Dr. Carpenter's medical education was commenced in the Bristol School of Medicine, from which he passed to University College. He was admitted a Member of the College of Surgeons and a Licentiate of the Society of Apothecaries in 1835, and in 1839 graduated at Edinburgh. After practising for a short time in Bristol, he relinquished the active pursuit of medicine and his appointment of Lecturer on Forensic Medicine in the Medical School, and settled in London, where he soon obtained the appointment of Lecturer on Physiology at the London Hospital School of Medicine. His first work of importance was the *Principles of General and Comparative Physiology*, which was published in 1839, and was dedicated to Sir John Herschel, and which, as the author states in his

preface, was peculiar, not only in giving a complete outline of the animal kingdom, but in the introduction of a similar view of the comparative structure and functions of vegetables, which are shown to be governed by the same laws. The work embraced the substance of an essay previously published on the laws regulating vital and physical phenomena, to which the Annual Students' Prize had been awarded by the medical faculty of the University of Edinburgh in 1837, and also of an essay on some departments of vegetable physiology. This work was so well received that it induced him to write his well-known Treatise on Human Physiology, which has passed through many editions, and which, when first published, was undoubtedly the best arranged and most clearly written work on physiology in the English language. Other volumes followed in rapid succession, amongst which his Manual of Physiology, the Microscope and its Revelations, and his Principles of Mental Physiology deserve special mention. In the last named treatise he discussed calmly and dispassionately the subjects of mesmerism, table-turning, and the like; and instead of ridiculing or bluntly denying the phenomena said to be observed, patiently set himself to verify facts, and to explain on rational grounds those which, however incredible they might at first sight appear, were still susceptible of explanation, whilst he did not hesitate to denounce those he thought were due to insincerity or actual fraud. In 1856 Dr. Carpenter was appointed Registrar of the University of London—an office which he held for twenty-three years; and being by this means left free to follow the bent of his talents, he devoted his leisure to the description and depiction of the Foraminifera, and subsequently to the examination of the results of the *Challenger* expedition, his investigations being specially

directed to the causes and courses of ocean currents. After becoming comparatively early in life a Fellow of the Royal Society, he became one of its vice-presidents, and was the recipient of the Royal medal for his physiological researches. He was also a Fellow of the Geological and Linnæan Societies, as well as of many others. He was made an honorary LL.D. of the University of Edinburgh in 1871, and was created a C.B. soon afterwards. In 1872 he presided over the Brighton meeting of the British Association. He had for some time previously to the accident which caused his death been in failing health.

The great charm of Dr. Carpenter's writings is in their lucid expression, a clearness that resulted, of course, from the thorough mastery he possessed of every subject on which he wrote. This feature was particularly observable in his more popular works, and was seen to perfection in such articles as those on the Zoetrope and its antecedents, the Phenakistoscope, the Stroboscope, and the Anorthoscope, written fifteen or sixteen years ago in the *Intellectual Observer*. The effects produced by these ingenious toys are by no means easy to explain without recourse to scientific language. Yet anyone of ordinary intelligence can follow his explanation with perfect ease, and it was this quality that caused his treatises on Physiology to hold for many years the foremost place in this country as sound and thoroughly trustworthy expositions of that subject. Not a great experimenter, like his master, Dr. Reid, of whom he always spoke in the highest terms, he yet fully understood the value of experiments, and made such careful deductions from those of others that, in looking through his larger works as they left his hands, it is impossible to avoid feeling that to bring them up to the present time little requires to be expunged or altered, but much, as might be expected,

to be added. In person, Dr. Carpenter was rather above middle height, of quiet and retiring manner, grave and rather cold and formal in his address, yet thoroughly willing and anxious to assist those who applied to him for advice in all scientific matters. His family, several of whom have long been familiar names in the scientific world, may feel assured that the profession mourns with them the loss of one so thoroughly high-principled and so universally esteemed.

The Medical Press and Circular, Nov. 18th, 1885.

The work of the late Dr. W. B. Carpenter in connection with the extension and popularisation of scientific knowledge in this country is not likely to be quickly forgotten, nor the fact that we owe to him more than to any one of his contemporaries the creation of that enthusiasm for the study of physiology which has been productive of such magnificent later results. The number of teachers in any one generation, who are endowed with the power of turning the minds of men towards studies not immediately remunerative, is exceedingly limited; and it not unfrequently happens that circumstances operate to divert their attention from those labours the production of which would be most fruitful of good. Fortunately for us to-day, Carpenter's earlier efforts were exerted in a field which offered to him facilities for the development of his highest powers as a teacher; and it was at the London Hospital medical school that he first entered on the duties of a lecturer on physiology. Prior to this time the subject of comparative physiology had hardly assumed the position

of a scientific study, and it needed all the skill of a thoroughly competent observer, with the materials then at hand, to construct a system which should exhibit at one view the structural continuity existing between the animal and vegetable kingdoms, and the dependence of physiological processes in both divisions of nature on the same organic laws. Even now, whoever will trouble to refer back to the first edition of the "*Principles of General and Comparative Physiology*," cannot fail to be struck with the evidence it affords of the author's profound knowledge of nature, and of a philosophical grasp of details, which is the more admirable as having been unassisted by any part of that grand accumulation of facts and inferences which has been the outcome of the application of evolutionary theories to the explanation of organic phenomena. Neither can we wonder that a work at once so comprehensive and so accurate secured for its author a prominence among scientific men to which he was assuredly entitled, and which he very quickly confirmed his right to by the publication of what has always remained the most important of his contributions to our literature—"The Principles of Human Physiology." This has probably exerted a greater influence on the progress of physiological science than any treatise ever written; it has certainly served, more or less, as the model of all the more valuable of its successors; and it long held its place unrivalled, until advancing years and the introduction of the experimental method by younger labourers in the field already illuminated by its teachings, led to the production of text-books which, though modelled still on its lines, were more in consonance with modern ideas of the manner in which the physiologist's labours should be pursued. But, notwithstanding, Carpenter's "*Principles*" has never yet been

relegated to the literary lumber-room, as is shown by the occasional appearance of new editions, and, thanks to the admirable editing of the work by Mr. Henry Power, it is to this day regarded as a standard work of reference.

In considering the period of the history of modern science covered by the earlier labours of the deceased physiologist, two names stand forth prominently in connection with the extension of biological science, and they are Owen and Carpenter. While the former was laying the foundations of modern biology and building up its structure on unassailable bases of observation and facts, the latter was steadily indoctrinating an ever-increasing class of interested listeners with the principles and details of the rapidly-growing scheme, and was founding, by his influence and example, a school of scientific enthusiasts to whom we owe more than it is customary in these days to admit. Carpenter's teaching accustomed the public to give ear to and to credit the statements of *savans*; and his own exertions as a lecturer can never be sufficiently recognised if we would appreciate the effect they have had in training the public to apprehend the value of investigations, which in the abstract are necessarily incomprehensible and unpractical to the uninitiated.

In another direction, also—that of microscopical studies—Dr. Carpenter accomplished invaluable work. Perhaps the most generally popular of all his works is that entitled “The Microscope and its Revelations;” and no one who has had any experience of the innumerable amateur scientific societies scattered throughout the country, can have any difficulty in determining to what extent this single book has influenced the love for practical microscopy among the masses. Formerly this was much more evident than now, when the pioneer of popular guides is only

one out of many similar volumes, and when we are liable to forget the indebtedness of the present to the labourers in the past.

The public services of the late Dr. Carpenter have been great and valuable, and their recognition by the gift of a C.B., and by the several honorary distinctions conferred on him from time to time, is gratifying as evidence of the increasing tendency to reward the highest order of merit in those whose lives are devoted to the advancing of human knowledge and the improvement of humanity. Not the least important part of his life was spent as Registrar of the University of London, the twenty-three years from 1856 to 1879 having been passed in the discharge of the duties of this post, and in the performance of other cognate labours. During this time he also contributed largely to scientific literature by the publication of a monograph on the Foraminifera, and by a masterly investigation into the causes and courses of ocean currents in connection with the results of the *Challenger* expedition.

One of the most remarkable of Dr. Carpenter's works is the "Principles of Mental Physiology," which, though wanting the finished accuracy of other volumes from his pen, as was necessitated by the state of knowledge on this subject, is yet likely to remain the standard basis of all future investigations in this branch of science.

The Inquirer, November 14th, 1885.

Science and Liberal Religion have alike sustained an irreparable loss by the unexpected death of this eminent man, at an age when some years more of devoted work might reasonably have been expected to crown the labours of a noble life. In his loyal allegiance to two departments of thought and inquiry which have often been regarded as antagonistic to each other, Dr. Carpenter was a conspicuous illustration of the fact that their mutual claims may be reconciled in the light of a liberal religious faith, and his life, of which we give a full outline, is full of instruction and encouragement to the student both of Science and Theology.

William Benjamin Carpenter* was born at Exeter in 1813, and was the fourth child and eldest son of Dr. Lant Carpenter, then one of the pastors of George's Meeting. Dr. Lant Carpenter was afterwards well known as a leading Unitarian divine; and by his indefatigable labours as a scholar, a teacher, a writer, and a philanthropist, he won a high place of public influence. The name of his eldest daughter, Mary Carpenter, who died in 1877, is widely known in Europe, India, and America, in connection with the great questions of education, criminal reform, and the elevation of women: her sisters, Mrs. Herbert Thomas, (who passed away in 1870), and Mrs. Robert Gaskell, devoted themselves in the same spirit of love to the

* A few particulars have been added to this sketch, chiefly concerning Dr. Carpenter's family. The scientific details are partly taken from a short memoir drawn up by Dr. Carpenter himself for the *Science Monthly*, December, 1884.—J. E. C.

welfare of those around them. The younger brothers of W. B. Carpenter, Russel and Philip, both entered the ministry. After a singularly active and earnest life (in which he achieved high scientific distinction as a conchologist) Dr. P. P. Carpenter died at Montreal in 1877. The Rev. R. L. Carpenter is still the beloved pastor of the congregation at Bridport, Dorsetshire.

After his father's removal to Bristol, in 1817, W. B. Carpenter received his early education in the school which Dr. Lant Carpenter established, and which was distinguished alike by its pervading spirit and by the practice of many methods of teaching then comparatively new, though now perfectly familiar. The effects of this training remained with him through all his years. He used afterwards to say that he had "known his Latin grammar at five," though the extent of this knowledge was never defined, and he did not require from his own boys such early attainment. He kept up his classical reading in after life as long as he could aid in his sons' education, and retained his early affection for his Greek Testament to the last. The rigorous exactness of study which Dr. Lant Carpenter enjoined, and the scientific principles which he was accustomed to demonstrate, suited the genius of his eldest son, who was anxious to adopt the profession of a civil engineer. Another opening, however, presented itself, through the kindness of Mr. Estlin, the valued friend and physician of Dr. Lant Carpenter's family, and W. B. Carpenter, accordingly, entered under his direction on the study of medicine. This really involved no little sacrifice on his part; and to the end of her life his mother regretted it, and doubted if it had been right to thwart an inclination so decided. Among the incidents of this period, to which he always looked back with pleasure, was a sojourn of

some length in the West Indies, as companion to Mr. Estlin and one of his patients. There he witnessed some of the social conditions which immediately preceded the abolition of slavery; and this experience often led him to be tolerant towards those who, in view of enormous practical difficulties, are sometimes less ardent than might be desired in causes of reform.

In 1833 W. B. Carpenter entered the medical classes at University College. His natural gifts were carefully trained by continuous industry; his college note-books show that in accordance with the demands of those days he often attended as many as thirty-five lectures a week. After passing the examinations of the Royal College of Surgeons and the Apothecaries' Society, he proceeded to the renowned medical school at Edinburgh. There he devoted himself especially to researches in the nervous system, and the titles of some of his first papers, "On the Unity of Function in Organised Beings," "On the Differences of the Laws Regulating Vital and Physical Phenomena," showed the early tendency of his mind towards subjects belonging to the philosophy of science. The same characteristics marked his graduation thesis in 1839. Its subject was "The Physiological Inferences to be Deduced from the Structure of the Nervous System of Invertebrated Animals." The views which he advanced as to the reflex function of the ganglia forming the gangliated cord of articulated animals, at first excited some opposition, but they were afterwards adopted by Professor Owen, and are now generally received. Two books in particular, he was wont in after life to say, exercised great influence over him in directing him to right methods of thought and inquiry—Sir John Herschell's "Discourse on the Study of Natural Philosophy," and Lyell's "Principles of Geology." Tak-

ing these in part as his models, he brought out in 1839 his first systematic work on what is now known as biology, under the descriptive title "Principles of General and Comparative Physiology, intended as an Introduction to the Study of Human Physiology, and as a Guide to the Philosophical Pursuit of Natural History." In this he endeavoured to give a general view of the science of life, and show the relations of the laws of the inorganic and organic worlds; a second edition was called for two years afterwards, and it was at once apparent that a mind of no common power had arisen in the ranks of physiologists.

Before his graduation Dr. Carpenter had already become Lecturer on Medical Jurisprudence at Bristol, and to this was afterwards added the subject of animal and vegetable physiology. In 1840 he was married to Miss Powell, daughter of a deceased merchant formerly well known in Exeter, and grand-daughter of Henry Cort, whose invention of iron-puddling gave so prodigious a stimulus to British industry. This union enriched his domestic life with a rare happiness, which seemed only to deepen when five sons had one after another quitted the home and gone out into the world, and the father and mother were left to cherish each other.

Besides his lecturing, Dr. Carpenter engaged in private practice, but finding himself keenly susceptible to its anxieties and responsibilities, he resolved, in a year or two after his marriage, to devote himself to scientific medicine. After a short residence at Ripley in Surrey, he finally settled in London in 1845 with the appointment of Fullerian Professor of Physiology in the Royal Institution. To this was afterwards added the Swiney Lectureship on geology which he twice held. He had now found his vocation as a teacher. At the London Hospital, and at University College, successive generations of students

listened to his lectures, and felt the lucidity of his thought, the skill of his demonstrations, and the patience and sympathy with which he laboured to remove difficulties and to clear up misunderstandings. It was, moreover, the beginning of the age of popular scientific literature, and while he was producing edition after edition of his higher physiological treatises, he did much to spread sound elementary knowledge by manuals on other branches of science. In 1849 he obtained a prize for the best essay on the subject of alcoholic liquors, in which he presented the arguments for total abstinence from the physiological point of view. Though obliged in later life (especially after a protracted illness in 1864-5) to take a moderate amount of stimulant, he always remained a hearty friend of the Temperance cause. In an address on the Physiology of Alcohols, delivered in 1882 in the Tremont Temple, Boston, Massachusetts, at the request of Governor Long, and other leading men, he re-affirmed many of the positions of his earlier essay.

The scientific work which Dr. Carpenter had already accomplished led to his election into the Royal Society in 1844. A brief survey of his subsequent labours will show how wide a range they embraced. The original treatise on Comparative and Human Physiology was divided into two, and each work received fresh enlargements in successive editions, being issued at the same time in America. A smaller manual has long served as a students' text-book, and his well-known work on the Microscope has stimulated and instructed a host of younger observers. Original research also largely engaged his attention. In a series of reports to the British Association and the Geological Society he summarised a succession of enquiries into the microscopic characters of shells. These were followed by

a set of four Memoirs in the Philosophical Transactions on the Australian and Philippine Foraminifera, and in 1862 the Ray Society published the results of many year's investigations in his "Introduction to the Study of the Foraminifera," a work which has served as the basis of all subsequent research in this department. Dr. Carpenter also applied himself earnestly to marine zoology, and spent many summer vacations at Arran and elsewhere in studying the structure of the feather-stars. This led on (in conjunction with Professor C. Wyville Thomson) to the *Lightning* expedition of 1868, which opened up a new era in deep sea research, at any rate in this country. The interesting results first obtained between the north of Ireland and the Faroe Islands led to further explorations in the Mediterranean, and in the Atlantic between Great Britain and Portugal. These culminated in the well known *Challenger* Expedition, in the preparations for which he took an active part. He was thus slowly guided to some very important conclusions upon oceanic circulation, which have been, we believe, generally adopted by the leading physicists both in this country and abroad. He has also left a large amount of unpublished material in proof of the animal nature of the peculiar formation belonging to the lower Laurentian rock of Canada, known as Eozoon. It had been his hope to devote part of the coming winter to the preparation of an exhaustive monograph on this subject. These labours did not pass unrewarded by the distinctions which science can confer. He received one of the Royal medals awarded by the Council of the Royal Society in 1861, and the Lyell Medal of the Geological Society in 1883. He more than once served as Vice-President of the Royal Society. In 1871 his own University of Edinburgh conferred on him the degree of LL.D., and he was Presi-

dent of the British Association in 1872. He was widely known abroad, from the year 1840, when a translation of one of his earlier essays inserted in a German periodical first brought his name before foreign *savans*. Among other honourable incidents he used to recall with pride that one of his physiological treatises had been read by the great embryologist Von Baer on the shores of the Caspian. He was a corresponding member of the American Philosophical Society; and when, in 1873, he was made a corresponding member of the Institute of France, the name which was submitted as an alternative to the choice of the electors was that of his friend, Charles Darwin.

Another important element of Dr. Carpenter's work lay in his services to education. These were extended far beyond the medical schools in which he lectured, or the manuals in which he set forth the results of his own and others' researches. As Principal of University Hall, from 1851 to 1859, he was in close contact with a number of young men, who received from him by personal instruction and by indirect example life-long impressions of character. But it is in connection with the University of London that his name will be longest remembered. He was appointed to the office of Registrar in 1856, and during the next twenty-three years he contributed largely to the immense extension of the work of the University, his services being recognised in 1872 by his nomination as a C.B. After his retirement in 1879 he was speedily enabled to resume a share in its proceedings, the next vacancy in the Senate being filled up by his appointment. He was in constant relations with educational bodies in all parts of the country, and his wide experience and comprehensive survey frequently brought the promoters of new schemes to him for counsel, which he was ever ready to give. Thus he rendered valuable aid in

the reorganisation of St. Paul's School; he was a member of the Council of the London Society for the extension of University teaching, and also of the Universities' Board; and, in more direct connection with his specific scientific studies, he promoted the foundation, and served as Vice-President, of the Marine Biological Association, which is about to carry out on Plymouth Sound explorations he had himself proposed for Milford Haven. During his latter years his administration of the Gilchrist Trust, of which he was secretary, led him to re-assume the function of lecturer which in middle life he had been obliged to lay aside. The audiences which he gathered on his short lecturing tours in the great manufacturing centres caught again and again from him some of his enthusiastic love of truth. With singular readiness he would pick up fresh illustrations from the special industries of the places he visited; and in the many homes which were freely opened to him, he was always a welcome and honoured guest.

The duties of his public office, together with the important investigations already recited, might have well absorbed Dr. Carpenter's whole time. But another department of his work has yet to be named. He had early manifested great interest in the study of the nervous system, and this remained a favourite object of his thought through his whole life. The treatise on "Human Physiology" contained an important chapter on this theme, and a series of articles and discussions carried his ideas still further. During his editorship of the *British and Foreign Medico-Chirurgical Review* (1847-1852) he published a criticism of Noble's "Physiology of the Brain," in which (as a writer in the *Times* has stated) "he not only demolished the last shred of supposed scientific foundation for the collection of fancies which were denominated 'phrenology,'

but extended the idea of reflex nervous function to the centres of sensation and ideation, and enunciated with a completeness which has stood the test of time the fundamental notions of 'consensual' and 'ideo-motor' action." Dr. Noble afterwards surrendered his chief hypothesis, and remained to the day of his death the warm friend of his critic. The conviction which Dr. Carpenter entertained of the increasing need of approaching psychological study through physiology, led him at last to work out his ideas in an independent form. In the year 1873, accordingly, he published his "*Principles of Mental Physiology*," in which he brought together a large number of singularly interesting facts, and expounded (in particular) a doctrine of the will, which was in reality a protest on physiological grounds against the necessarian conceptions of his early philosophical training, and to which he ascribed the highest educational and moral importance. This book has also passed through several editions. In connection with the investigations thus reduced into more systematic form may be mentioned various articles on different types of psychic phenomena, such as mesmerism; while he also devoted much labour to the unravelling of the complications of so-called spiritualism.

The philosophical character of Dr. Carpenter's mind led him to bestow much thought on higher speculations which might appear insufficiently supported for scientific use. Thus in 1850 he sent in a paper to the Royal Society applying the doctrine of Mr. (now Sir William) Grove on the correlation of the physical forces to the so-called vital force. This paper was, we believe, at first regarded as too abstract and hypothetical, and some doubt was expressed as to its admission into the *Philosophical Transactions*. But its main principle, which in this country was

quite new, though he had been anticipated (unknown to himself) by Meyer and Helmholtz, has since, under the name of the "conservation of energy," become a recognised scientific truth. In his Presidential Address at the Brighton meeting of the British Association he sought to call the attention of the scientific world to the consideration that force and not matter is our primary cognition; and several subsequent papers have developed the same view. The application of his ideas of force to the religious interpretation of the universe has again and again occupied his pen. Nearly forty years ago he contributed a series of papers to this journal, in which he took a view of the reign of law which enabled him to regard miracles not as a violation of the order of nature, but as the manifestation of a higher order than that known to us. And in many subsequent essays—among which his articles in the *Modern Review* may be fresh in the minds of some of our readers—he developed from the scientific side with felicitous fertility of illustration the conception of the divine government which he found presented from the point of view of philosophy and religion in the writings of his life-long and revered friend Dr. Martineau. His views on many of these subjects naturally underwent considerable modification, but he cherished especially the maxim of Schiller, that the scientific man loves truth better than his system.

The convictions which he thus expressed secured him the sympathy of numbers of religious minds of all shades of belief. He had an unusually large acquaintance with clergymen in the Established Church, and with ministers of all denominations. He took a warm interest in the general progress of liberal thought, and was ever ready to aid it to the utmost of his ability. Especially in Scotland, which he frequently visited, did he note with pleasure the

many signs of theological advance since the time of his first residence in Edinburgh. He kept himself acquainted with the results of Biblical study, and among the books which he had recently read he referred with special interest to Dr. A. B. Davidson's "Commentary on Job." To his own household of faith, to the congregation with which he had worshipped for nearly forty years (and for which he long conducted the psalmody), he remained attached to the last. After his retirement from the office of Registrar of the University of London, he frequently attended the meetings of the Council of the British and Foreign Unitarian Association, of which he was a Vice-President; in the London Domestic Mission he took an earnest interest; and he warmly supported the scheme for a new periodical projected at the Birmingham Conference in April last. A visit to America, three years ago, gave him an opportunity of making personal acquaintance with many whom he had before known only by name; and nothing, perhaps, surprised or pleased him more than the repeated requests which flowed in on him from the theological colleges and other kindred institutions, representing creeds different from his own, for an address on some subject of religious or moral philosophy.

The wide circle of Dr. Carpenter's interests and the broad scope of his labours has been but imperfectly indicated in the foregoing sketch. A list of his contributions to different cyclopædias—last and not least, to the "Encyclopædia Britannica," now in course of publication, and to all kinds of reviews, would reveal still more topics which he illuminated by his knowledge. He was well versed in literature, and turned for refreshment in hours of weariness to his favourite Scott. Political memoirs of his own time were read with the keenest relish, for he had

early learned from his father, Dr. Lant Carpenter, to take a high view of a citizen's obligations, and the Bristol riots, which he had witnessed, made a life-long impression upon him. A brief sojourn in Italy called forth a susceptibility to the enjoyment of art, which was a surprise even to himself; and in music, from the time that he had taught himself as a young man to play on the organ, he found unfailing recreation. Nature, likewise, in her vaster as well as her microscopic forms, was for him full of charm and delight, and from every excursion he carried back memories which remained singularly vivid and distinct. In society his immense stores of information, his sympathetic interest in others, his thorough enjoyment of humour though he felt unable to originate it, made him a genial and ever-welcome companion, while his friends learned how strong a confidence might be placed in his faithfulness. Many young men found unexpected help and encouragement in him, and he rejoiced when he could open a way to those who were involved in the struggles through which he had himself once passed. The dominant conception of his life—as was fitting in one of Puritan descent—was that of duty. And if this sometimes took austere forms, and led him to frame expectations which others could not always satisfy, an enlarging experience mellowed his judgment and enabled him to apprehend their position from their point as well as his own. Released from the pressure and strain of earlier life, he was able to give freer play to his rich affections; and in his own family they only know what they have lost who will never again on earth feel his support as husband and father, brother and friend.

During the past few months his strength had shown many signs of decline, especially through a period of

prolonged indisposition in the summer. A sojourn in Scotland greatly renewed his energies; he was able to attend the meeting of the British Association at Aberdeen; and it was with unusual pleasure that on his return home he felt able to avail himself of the hospitality of the Bishop of Ripon. His visit to the Palace happened to coincide with an ordination, and he found peculiar interest in learning all the details of the examination (in one department of which his own Mental Physiology was prescribed), in hearing the ordination sermon, and in intercourse with the clergy and some of the candidates. He had been reading with great care Dr. Temple's Bampton Lectures, which revived so much of his old interest that he readily accepted an invitation to read a paper on Miracles at the forthcoming meeting of the Christian Conference on Monday next. This was much in his mind in these last days. On Sunday it was the subject of discussion at the house of one of his sons, when he dwelt with special force on the testimony of Paul to the Resurrection, and expressed a characteristic suspense of judgment. On Monday it was again a topic of conversation with Dr. Martineau, whom he met at the Athenæum, and his utterance was again marked by unabated vigour and clearness. He recurred to this meeting with especial pleasure in the course of the evening. On retiring to rest he took a hot air bath to ease the stiffness and rheumatic pains which the damp weather rendered unusually severe, when the accidental overturning of the lamp inflicted such injuries that after a few hours—which closed in tranquil sleep—he passed quietly away.

“ Servant of God, well done.”

Printed by H. K. Lewis, 136 Gower Street.

